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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/915,184	07/24/2001	Edmund L. Wolak	P1292	5265

22849 7590 11/07/2003

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EXAMINER

MENEFEE, JAMES A

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 11/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/915,184

Applicant(s)

WOLAK ET AL.

Examiner

James A. Menefee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,7-12,14 and 23-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,7-12,14 and 23-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

In response to the amendment filed 4 September 2003, claim 31 is amended.

Claims 1, 7-12, 14, and 23-32 are pending. Note that the statement of common ownership of the present application and Vail et al. (US 2002/0106156) is satisfactory to exclude the Vail reference as prior art.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 7-8, 10-12, 14, and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harker (previously cited 5,940,557) in view of Aherne et al. (previously cited US 6,400,736), and further in view of Dawes et al. (US 6,488,414).

Regarding claim 1, Harker discloses a system comprising a laser diode source 8 having a first Fabry-Perot cavity 9 having a first cavity axis inherently between a back facet and a front facet 10, each facet having a reflectance where the reflectance of the back facet is inherently higher than that of the front facet 10 because light is emitted from the front facet 10. A pigtail fiber 1 having a lensed fiber input end and positioned from the front facet 10 of the laser diode 8 to form an optical coupling region and is aligned relative to a lasing cavity 9 of the laser diode 8 to receive the first light output into the fiber. A first portion of the first light output will be

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reflected off the lensed fiber input end and a second portion will be directed back into the cavity and a third portion will be reflected off the front facet. This forms a second cavity between the fiber and the front facet that inherently will be periodically out of phase with the first cavity 9 due to changes in the ambient temperature of the system, thus forming a tracking error. There are means for suppressing the formation of the second cavity, i.e. the fiber being angled so that less light will be reflected back to the first cavity 9 (see especially Figs. 1-3 and the discussion thereof). There is not disclosed a light monitor positioned adjacent to the back facet that receives light emitted from the back facet. Aherne teaches a laser diode that emits light from both a front facet 24 and a back facet 25, where light from the back facet 25 is received by a light monitor 29 (Fig. 2). It would have been obvious to one skilled in the art to include a back facet that emits light to a light monitor so that the light output of the laser can be monitored and a bias to the laser can be controlled based on the laser output, as taught by Aherne.

Further regarding claim 1, it is not disclosed that the lensed fiber input end comprises a biconic lens. Dawes teaches a fiber having a lensed input that may be interpreted as biconic. It would have been obvious to one skilled in the art to use a lens of Dawes as the input to the fiber as the input will couple light into the fiber effectively, is highly reproducible, and has a low cost, as taught by Dawes.

Regarding claims 7 and 10-12, the lens 32 of Dawes has a number of origins of first radius, and it is inherent that at least one of the origins will be offset as claimed.

Regarding claim 8, the center of the core of Harker, i.e. where the light from the laser hits the fiber, is coplanar with the cavity axis of the laser diode.

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Regarding claim 14, the lensed fiber input facet 7 will be reflective to light, therefore it is interpreted as having a reflective coating. It is not taught that this reflectivity is higher than the reflectivity of the front facet. The applicant teaches that it is well known that the front facet of a laser diode may be anti-reflecting (par. 5). It would have been obvious to one skilled in the art to make the front facet anti-reflecting so that most of the laser output will go out that side, as taught by the applicant.

Regarding claims 23-26, the limitations are disclosed as in the above rejections.

Claims 9 and 27-32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harker, Aherne, and Dawes as applied to the claims above, and further in view of Roff (previously cited US 5,500,911). Harker discloses that the fiber input end is aligned at an angle relative to the laser diode cavity axis, but does not disclose that the angle should be 2-6 degrees. Roff teaches a fiber that is angled relative to a laser cavity at an angle of 5.5-8 degrees (col. 3 line 54 – col. 4 line 3). It would have been obvious to one skilled in the art to dispose the fiber at such an angle from the laser diode cavity so that any light energy that is reflected by the end face of the fiber is directed away from the optical axis of the system, as taught by Roff.

Regarding claims 28-30, in certain embodiments of Harker (e.g. Fig. 2) the fiber is related to the laser as claimed.

### ***Response to Arguments***

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. However, it should be noted that while the newly cited

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Dawes reference does not disclose the biconic lens per se as recited in the specification, the lens of Dawes may be broadly construed as biconic. The applicant should further recite structure of the biconic lens in the claims in order to distinguish from this reference.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Menefee whose telephone number is (703) 605-4367. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



JM  
November 3, 2003



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